WHAT IS CLAIMED IS:

1. A communications network having a near end and a far end, said near end having a first channel unit connected thereto, and said far end having a second channel unit connected thereto,

   said channel units adapted to be activated from either the first channel unit or the second channel unit to cause a signal of known amplitude and shape to be transmitted from said second channel unit over said communications network to said first channel unit,

   said first channel unit adapted to receive said signal and analyze said received signal, and

   said first channel unit further adapted to compensate for impairments in said communications network in both forward and reverse directions based on said analysis.

2. The communications network of claim 1, wherein said signal comprises a square wave at a fundamental frequency.

3. The communications network of claim 1, wherein said first channel unit employs discrete Fourier analysis to analyze said signal.

4. The communications network of claim 3, wherein said signal comprises a square wave at a fundamental frequency.

5. The communications network of claim 2, wherein said fundamental frequency is approximately 1 kHz.

6. The communications network of claim 4, wherein said fundamental frequency is approximately 1 kHz.

7. The communications network of claim 4, wherein said first channel unit employs discrete Fourier analysis to determine the level of the signal at said fundamental frequency and a plurality of odd harmonics thereof.

8. The communications network of claim 6, wherein said first channel unit employs discrete Fourier analysis to determine the level of the signal at said fundamental frequency and a plurality of odd harmonics thereof.

9. The communications network of claim 1, wherein said second channel unit is adapted to disconnect customer equipment from said communications network prior to and during transmission of said signal.

10. The communications network of claim 9, wherein said second channel unit is provided with an energy storage device, said energy storage device being adapted to store energy to operate said second channel unit while said first channel unit sends encoded instructions to said second channel unit in the form of interruptions in said second channel units power supply.

11. A system for compensating for line impairments in a telecommunications network comprising a communications network having a near end and a far end, said near end having a first channel unit attached thereto, and said far end having a second channel unit attached thereto,

said channel units adapted to be activated from either the first channel unit or the second channel unit to cause a signal of known amplitude and shape to be transmitted from said second channel unit over said communications network to said first channel unit,

said first channel unit adapted to receive said signal and analyze said received signal, and

said first channel unit further adapted to compensate for impairments in said communications network in both forward and reverse directions based on said analysis.

12. The system of claim 11, wherein said signal comprises a square wave at a fundamental frequency.

13. The system of claim 11, wherein said first channel unit employs discrete Fourier analysis to analyze said signal.

14. The system of claim 13, wherein said signal comprises a square wave at a fundamental frequency.

15. The system of claim 12, wherein said fundamental frequency is approximately 1 kHz.

16. The system of claim 14, wherein said fundamental frequency is approximately 1 kHz.

17. The system of claim 14, wherein said first channel unit employs discrete Fourier analysis to determine the level of the signal at said fundamental frequency and a plurality of odd harmonics thereof.

18. The system of claim 16, wherein said first channel unit employs discrete Fourier analysis to determine the level of the signal at said fundamental frequency and a plurality of odd harmonics thereof.

19. The system of claim 11, wherein said second channel unit is adapted to disconnect customer equipment from said communications network prior to and during transmission of said signal .

20. The system of claim 19, wherein said second channel unit is provided with an energy storage device, said energy storage device being adapted to store energy to operate said second channel unit while said first channel unit sends encoded instructions to said second channel unit in the form of interruptions in said second channel units power supply.

21. A method of compensating for frequency varying attenuation in a telecommunications network, said method comprising:
connecting a first channel unit to a company end of said network,
connecting a second channel unit to a customer end of said network,
transmitting a signal of known amplitude and shape from said second channel unit to said first channel unit over said network,
receiving and analyzing said signal at said first channel unit, and
amplifying signals transmitted over said network in both forward and reverse directions based on said analysis.

22. The method of claim 21, wherein said transmitting step comprises transmitting a square wave at a fundamental frequency.

23. The method of claim 21, wherein said analyzing step further comprises employing discrete Fourier analysis to analyze said signal.

24. The method of claim 23, wherein said transmitting step comprises transmitting a square wave at a fundamental frequency.

25. The method of claim 22, wherein said fundamental frequency is approximately 1 kHz.

26. The method of claim 24, wherein said fundamental frequency is approximately 1kHz.

27. The method of claim 24, wherein said analyzing step further comprises employing discrete Fourier analysis to determine the level of the signal at said fundamental frequency and a plurality of odd harmonics thereof.

28. The method of claim 26, wherein said analyzing step further comprises employing discrete Fourier analysis to determine the level of the signal at said fundamental frequency and a plurality of odd harmonics thereof.

29. The method of claim 21, further comprising the steps of disconnecting customer equipment from said communications network at said second channel unit prior to and during transmission of said signal.

30. The method of claim 29, further comprising the steps of storing energy received from said telecommunications network in an energy storage device within said second channel unit to allow said second channel unit to operate while said first channel unit sends encoded instructions to said second channel unit in the form of interruptions in said second channel units power supply.

31. A method of commanding a device connected to a telephone network to perform an action, said method comprising:

applying a signal comprising a series of voltages to one of the set of leads consisting of the tip lead and the ring lead, each voltage being applied for a predetermined duration, such that the frequency of the signal is substantially below the voice band, said signal being associated with a desired action to be performed,

receiving said signal at a device connected to said telephone network, and

performing said desired action upon receipt of said signal.

32. The method of claim 31 wherein said applying step further comprises applying said series of voltages as an alternating pattern of a predetermined voltage and ground.

33. The method of claim 31 wherein said applying step comprises applying said series of voltages such that the frequency is below 200 Hz.

34. A method of commanding a device connected to a telephone network to perform an action, said method comprising:

connecting a commanding device to said telephone network,

connecting a command receiving device to said telephone network,

causing said commanding device to draw a predetermined DC current from said network for a predetermined duration,

sensing said current for said duration by said command receiving device, and

causing said command receiving device to perform an action associated with said current upon sensing said current for said duration.